

SAMPLE/CORE DESCRIPTION

C327

Hole No. #3 Willow Creek  
 Location 1500' FSL x 1750' FEL Sec. 4-T4S-R97W  
 County and State Rio Blanco Co., Colorado  
 Elev. 6930' TD 1800'  
 Spud                      Compl. 2/18/76  
 Examined by                     

From	To	
Run #74 754.5-762.0	Cored	7.5' Rec. 5.5' Lost 2.0'
754.5	756.0	Mrlst; gray to gray brown, laminated, plty, partly silty, broken thru, tr vugs, with thin str gray tuff, even bdd
756.0	757.4	Oil shale; gray brown to dark gray brown, laminated in parts, plty, core broken thru
757.4	760.0	Oil Shale, brown to gray brown, laminated, dense in parts, bcm mrly, tr scut pyr specks and streaks
760.0	762.0	Lost
Run #75 762.0-764.5	Cored	2.5' Rec. 2.0' Lost 0.5'
762.0	763.0	Mrlst; gray to gray brown, laminated, vuggy, core very badly broken thru, pyr scat thru, pt altered, very arg, tuff in parts
763.0	764.0	Oil Shale; gray-brown to dark gray-brown, broken thru, vuggy partly laminated, trace sks
764.0	764.5	Lost
Run #76 764.5-769.0	Cored	4.5' Rec. 3.7' Lost 0.8'
764.5	768.2	Mrlst; brown to gray-brown, laminated, platey, with occassional thin streaks of oil shale, even bedded
768.2	769.0	Lost
Run #77 769.0-775.0	Cored	6.0' Rec. 6.0' Lost 0'
769.0	770.5	Marlstone; gray-brown to brown, laminated, platey, with occasional thin streak of oil shale, even bedded, trace pyrite
770.5	775.0	Marlstone; bf to gray-brown, very badly broken (rubble) grading to oil shale
Run #78 775.0-777.5	Cored	2.5' Rec. 2.0' Lost 0.5'
775.0	777.0	Oil shale; gray-brown to dark gray-brown, very badly broken (rubble), partly mrly, partly vuggy
777.0	777.5	Lost
Run #79 777.5-782.0	Cored	4.5' Rec. 4.5' Lost 0'
777.5	778.5	Oil shale; dark gray-brown, partly broken and fractured, slightly vuggy with thin tuff
778.5	780.5	Marlstone, buf to light gray-brown, silty, partly laminated, broken thru
780.5	782.0	Siltstone; bf, marly to very marly, partly banded

From	To	
Run #80	782.0-784.0	Cored 2.0' Rec. 7' Lost 1.3'
782.0	782.7	Marlstone and oil shale; rubble buff to dark brown, very badly broken, partly vuggy, partly with pyrite
782.7	784.0	Lost
Run #81	784.0-789.0	Cored 5.0' Rec. 5.0' Lost 0'
784.0	785.0	Oil shale; breccia, brown to dark brown, partly laminated
785.0	787.0	Oil shale; gray-brown to dark brown, fractured throughout, partly vuggy, some viggs filled with brown clay type matter
787.0	789.0	Oil shale; buff to brown, very marley in parts, very badly broken (rubble), banded, platey, even bedded
Run #82	789.0-795.0	Cut 6.0' Rec. 5.5' Lost .5'
-789.0	794.5	Marlstone; gray to gray-brown, laminated, broken throughout, with occasional streaks of oil shale, even bedded
794.5	795.0	Lost
Run #83	795.0-800.0	Cut 5.0' Rec. 5.0'
795.0	800.0	Oil shale; brown to gray-brown, broken throughout, with gray tuff streaks, vuggy, uneven bdg in parts, with wh min in parts of vugs, possible dol, with 45° fractured showing sks
Run #84	800.0-802.0	Cut 2.0' Rec. 2.0'
800.0	802.0	Oil shale; brown to gray-brown, partly vuggy, laminated, partly fractured
Run #85	802.0-806.5	Cut 4.5' Rec. 4.2' Lost .3'
802.0	806.2	Oil shale; brown to gray-brown, partly fractured, with wh coating on face of fracture, few vugs with wh min filling - possible dol, thin streaks of buff tuff, generally with con
Run #86	806.5-812.0	Cut 5.5' Rec. 5.5'
806.5	812.0	Oil shale; dark brown to dark gray-brown, top 2' slightly fractured, slightly laminated, hard, dense
Run #87	812.0-822.0	Cut 10.0' Rec. 8.0' Lost 2.0'
812.0	815.5	Oil shale; dark gray-brown to brown, laminated, even bedded, hard, becoming marley at base
815.5	816.3	Marlstone; buff, silty with thin streaks of oil shale, with pyrite bleb, laminated
816.3	820.0	Oil shale; brown with scattered streaks of gray tuff, vuggy near bottom, some vugs filled with wh min - possible dol, tuff in parts, generally even bedded, trace irregular bdg
820.0	822.0	Lost
Run #88	822.0-829.0	Cut 7.0' Rec. 7.0'
822.0	829.0	Oil shale; brown to gray-brown, partly marley, few vugs with wh min possible dol, with thin streaks of buff tuff scattered throughout, hard, generally even bedded

From	To	
Run #89 829.0-839.0	Cut	10.0' Rec. 9.8' Lost 0.2'
829.0	830.5	Oil shale; brown to gray-brown, laminated, slightly tuff in parts
830.5	834.9	Oil shale; brown to buff, marley, laminated, vugs scattered throughout, even bedded
834.9	838.8	Oil shale; brown to dark brown, hard, few scattered vugs, filled with wh min possible dol, trace pyrite scattered throughout
838.0	839.0	Lost
Run #90 839.0-848.0	Cut	9.0' Rec. 9.0'
839.0	848.0	Oil shale; brown to dark brown, top 1.3' fractured, pyrite along partings, few vugs, laminated, slightly marley, hard, even bedded
Run #91 848.0-851.0	Cut	3.0' Rec. 2.7' Lost 0.3'
- 848.0	850.7	Oil shale; brown, laminated, hard, slightly marley, with 2" gray tuff streaks near top
11/19/76 - Set 3" OD casing at 851' and preparing to continue coring - NX size core (2.0")		
Run #92 851.0-861.0	Cut	10.0' Rec. 10.0'
851.0	858.0	Oil shale; brown to gray-brown, laminated, slightly marley, generally even bedded, trace irregular bdg, hard
858.0	861.0	Marlstone; buff, partly laminated, with few vugs filled with gray dol, with streaks of low grade oil shale scattered throughout
Run #93 861.0-871.0	Cut	10.0' Rec. 9.9' Lost 0.1'
861.0	864.6	Marlstone; buff to brown, laminated, with streaks of low grade oil shale, with 1" vug filled with anhy at 864', even bedded
864.6	868.3	Oil shale; brown to gray-brown, laminated, slightly marley, with vugs up to 2" near top, vugs partly filled with clay
868.3	870.9	cht and f dism pyrite, generally even bedded
870.9	871.0	Oil shale; buff to brown, marley to very marley, laminated, even bedded
Run #94 871.0-881.0	Cut	10.0' Rec. 9.9' Lost 0.1'
871.0	876.5	Lost
876.5	880.9	Oil shale; brown to buff, marley in parts, with scattered vugs partly filled with aly cht and f dism pyrite, few buff tuff streaks, laminated, even to irregular banding, trace looped banding
880.9	881.0	Marlstone; buff to brown, laminated, partly silty, with buff siltstone streaks, with scattered streaks of low grade oil shale, few vugs as above, tuff in parts
Run #95 881.0-891.0	Cut	10.0' Rec. 10.0'
881.0	887.5	Lost
887.5	891.0	Oil shale; brown to buff with dark brown layer, marley, laminated, with 1" vug at 881.7', partly filled with cht and clay, tuff, in parts, even bedded
Run #96 891.0-901.0	Cut	10.0' Rec. 9.9' Lost 0.1'
891.0	897.0	Marlstone; buff, laminated, with streaks of low grade oil shale, small vugs scattered throughout, even bedded
		Oil shale; brown to buff, marley to very marley, laminated, trace vugs, with thin streaks nacolite scattered between 894-895' sa-c, even bedded

From	To	
897.0	897.2	Sandstone; gray S & P, fine to very fine grained, with asphalt o stn throughout
897.2	900.9	Marlstone; buff to brown, with thin streaks low grade oil shale scattered throughout, even bedded, laminated
900.9	901.0	Lost
Run #97	901.0-911.0	Cut 10.0' Rec. 10.0'
901.0	911.0	Oil shale; buff to dark brown, marley to very marley in parts laminated even bedded, hard, some bleb structure
Run #98	911.0-919.0	Cut 8.0' Rec. 8.0'
911.0	919.0	Oil shale; brown to gray-brown, marley, laminated, generally even bedded, some bleb structure, with 0.2' of sa-c nacolite included at 913.3'
Run #99	919.0-922.0	Cut 3.0' Rec. 3.0'
919.0	922.0	Oil shale; brown to gray-brown, marley, laminated, even bedded
Run #100	922.0-932.0	Cut 10.0' Rec. 9.9' Lost 0.1'
922.0	930.9	Oil shale; brown to gray-brown, marley to very marley, laminated even bedded
930.9	931.9	Marlstone; buff, laminated, with thin streaks of low grade oil shale, even bedded
931.9	932.0	Lost
Run #101	932.0-942.0	Cut 10.0' Rec. 10.0'
932.0	933.4	Marlstone; buff, laminated with streaks of oil shale, with thin sandy streaks in parts
933.4	942.0	Oil shale; brown to gray-brown, with wh silty streaks (.04') at 933.5', few scattered alt brown tuff streaks, with 0.4' interbedded nahcolite and oil shale at 939.6', generally even bedded with some bleb structure and some looped banding, laminated, becoming very marley near base
Run #102	942.0-952.0	Cut 10.0' Rec. 10.0'
942.0	945.0	Oil shale; gray-brown buff, very marley, laminated, generally even bedded, slightly sandy in parts, with wh silty coating on parting at 943.9'
945.0	949.0	Oil shale, brown to dark brown, with 1" vugs scattered throughout vug at 947.0 is partly filled with nacolite, generally even bedded, some wavy banding, laminated
949.0	952.0	Oil shale, buff to gray-brown, very marley laminated, even bedded
Run #103	952.0-962.0	Cut 10.0' Rec. 9.9' Lost 0.1'
952.0	956.0	Marlstone; gray to gray-brown, partly laminated, with few streaks oil shale, even bedded
956.0	961.9	Oil shale; brown to gray-brown, marley, with buff streaks between 956-957', with wh silt along partings, generally even bedded, some wavy and looped banding, partly laminated
961.9	962.0	Lost

From	To			
Run #104	962.0-972.0	Cut	10.0'	Rec. 9.9' Lost 0.1'
962.0	971.9			Oil shale; gray-brown to brown, slightly marley, laminated, with occasional sandy streaks; with asphalt streaks near base, becoming very marley near base, generally even bedded
971.9	972.0			Lost
Run #105	972.0-982.0	Cut	10.0'	Rec. 10.0'
972.0	982.0			Oil shale; gray-brown, marley to very marley, laminated, generally even bedded, with streaks (.2') buff siltstone at 974', few asphalt streaks near top
Run #106	982.0-992.0	Cut	10.0'	Rec. 10.0'
982.0	990.2			Oil shale; gray-brown, marley, laminated, generally even bedded
990.2	992.0			Marlstone; buff, partly laminated, with streaks of oil shale, generally even bedded
Run #107	992.0-1002.0	Cut	10.0'	Rec. 10.0'
992.0	995.0			Marlstone; gray-brown, with streaks of oil shale, laminated, generally even bedded
995.0	1002.0			Oil shale, gray-brown to dark brown, marley in parts, laminated generally even bedded
Run #108	1002.0-1006.0	Cut	4.0'	Rec. 4.0'
1002.0	1006.0			Oil shale; brown, slightly marley, with asphalt and pyrite streaks between 1002-1003', generally even bedded, some bleb structure, laminated
Run #109	1006.0-1012.0	Cut	6.0'	Rec. 6.0'
1006.0	1012.0			Oil shale; brown, with few streaks of asphalt and f dism pyrite, generally even bedded, some bleb structure, laminated
Run #110	1012.0-1022.0	Cut	10.0'	Rec. 9.9' Lost 0.1'
1012.0	1021.9			Oil shale; brown to dark brown partly gray-brown, laminated, generally even bedded, some bleb structure
1021.9	1022.0			Lost
Run #111	1022.0-1032.0	Cut	10.0'	Rec. 10.0'
1022.0	1032.0			Oil shale; as above
Run #112	1032.0-1042.0	Cut	10.0'	Rec. 10.0'
1032.0	1042.0			Oil shale; dark brown to dark gray-brown, with occasional buff streaks, laminated, even bedded, with occasional marley streaks, ahrd
Run #113	1042.0-1052.0	Cut	10.0'	Rec. 10.0'
1042.0	1052.0			Oil shale; dark gray to gray-brown, laminated, even bedded, hard
Run #114	1052.0-1062.0	Cut	10.0'	Rec. 10.0'
1052.0	1062.0			Oil shale; dark gray--brown to brown, partly laminated, slightly marley in parts from 1059-1062', with fracturs filled with wh calite in top ft, even to wavy banding, some bled structure in last 3'
Run #115	1062.0-1072.0	Cut	10.0'	Rec. 10.0'
1062.0	1072.0			Oil shale; dark gray-brown to brown with black streaks in parts, partly laminated, hard, generally even bedded, some wavy banding, some bleb structure

From	To	
Run #116 1072.0	1082.0	Out 10.0' Rec. 10.0'
1072.0	1082.0	Oil shale; as above
Run #117 1082.0	1092.0	Out 10.0' Rec. 10.0'
1082.0	1092.0	Oil Shale; dark gray-brown to brown with black streaks, partly laminated, even to wavy banding, some bleb structure, hard

From	To	
Run #118 1092.0-1102.0	Cut 10.0' Rec. 10.0'	
1092.0	1102.0	Oil shale; dark gray-brown to brown, with few black streaks, partly laminated, hard, generally even bedded, some bleb structure, with few goul chn nodules, tract gil
Run #119 1102.0-1112.0	Cut 10.0' Rec. 10.0'	
1102.0	1112.0	Oil shale; dark gray-brown to brown, with few black streaks, partly laminated, generally even bedded, with few brown sid nodules
Run #120 1112.0-1122.0	Cut 10.0 Rec. 10.0'	
1112.0	1117.0	Oil shale; brown to gray-brown, laminated, even bedded
1117.0	1122.0	Oil shale; buff to brown, marley to very marley, laminated even bedded
Run #121 1122.0-1128.8	Cut 6.8' Rec. 6.8'	
* Note - at approximately 1129' encounterd gas (225 PM 11/23/76) well intermittently blew gas into Wednesday (11/24/76) when geologist left location for Thanksgiving break. The gas had a slight H <sub>2</sub> O odor and appeared to be of low methane concentration.		
1122.0	1128.8	Marlstone; light gray to buff; interbedded with streaks of gray siltstone, partly laminated, silty, with few scattered oil shale streaks, with fractured dissecting core from 1128.1-1128.4'
Run #122 1128.8-1138.8	Cut 10.0' Rec. 10.0'	
1128.8	1138.8	Marlstone; gray-brown to buff, silty to very silty in parts, with few streaks brown oil shale, partly laminated, generally even bedded, some wavy banding, fractures at 1134'
* Note - Well blew gas after the core barrel was removed.		
Run #123 1138.8-1148.8	Cut 10.0' Rec. 10.0'	
1138.8	1147.7	Oil shale; gray-brown to brown, marley to very marley, generally even bedded, laminated
1147.7	1148.8	Marlstone; buff to gray-brown, partly laminated
Run #124 1148.8-1158.8	Cut 10.0' Rec. 10.0'	
1148.8	1155.3	Oil shale; brown to gray-brown to buff, marley, streaks scattered throughout, even bedded, laminated
1155.3	1158.8	Oil shale; brown to gray-brown, with marley streaks, fractured throughout, partly with wh calcareous on fractures, laminated generally even bedded
Run 125 1158.8-1168.8	Cut 10.0' Rec. 10.0'	
1158.8	1162.0	Oil shale; gray brown to brown, with marley streaks with vertical fractures throughout, fractures filled with wh calcareous, generally even bedded, laminated
1162.0	1168.8	Oil shale; gray-brown to dark brown, partly marley, laminated, even bedded
Run #126 1168.8-1172.0	Cut 3.2' Rec. 3.2'	
1168.8	1172.0	Oil shale; dark brown to buff, partly marley, laminated, even bedded
Run #127 1172.0-1182.0	Cut 10.0' Rec. 10.0'	
1172.0	1182.0	Oil shale; gray-brown to dark gray-brown, slightly marley in parts, laminated, even bedded, trace asphalt streaks, gil streaks at 1180.9'

From	To	
Run #128	1182.0-1191.0	Cut 9.0' Rec. 9.0'
1182.0	1183.0	Oil shale; dark brown, laminated, even bedded, with a vertical fracture
1183.0	1191.0	Marlstone; gray-brown to buff, with streaks of brown oil shale, with vertical fractures partly filled with wh calcareous, even bedded, partly laminated
Run #129	1191.0-1201.0	Cut 10.0' Rec. 10.0'
1191.0	1199.5	Oil shale; dark gray-brown, partly laminated, generally even bedded, some bleb structure, few cht nodules, few scattered fractures
1199.5	1201.0	Marlstone; gray-brown, with streaks of oil shale, even bedded
Run #130	1201.0-1211.0	Cut 10.0' Rec. 10.0'
1201.0	1211.0	Marlstone; gray-brown, interbedded with brown oil shale streaks, laminated, partly fractured, even bedded with few bleb structures
Run #131	1211.0-1221.0	Cut 10.0' Rec. 10.0'
1211.0	1214.0	Oil shale; dark gray-brown, with scattered dark brown cht nodules even bedded, partly laminated
1214.0	1221.0	Oil shale; brown to gray-brown, with marley streaks throughout, laminated, even bedded, fractures from 1215-1216'
Run #132	1221.0-1231.0	Cut 10.0' Rec. 10.0'
1221.0	1231.0	Oil shale; dark gray to dark black-gray to brown, marley, interbedded with dark black-gray clayey streaks, with few fractures scattered throughout, partly with sks, even bedded
Run #133	1231.0-1241.0	Cut 10.0' Rec. 10.0'
1231.0	1236.1	Oil shale; dark gray to brown, marley, interbedded with dark black-gray clayey streaks, fractures at 1235.2 with sks, tract gil at 1235.4, even bedded
1236.1	1241.0	Marlstone, light gray-brown to buff, with gy siltstone streaks scattered throughout, laminated, even to wavy banding
Run #134	1241.0-1251.0	Cut 10.0' Rec. 10.0'
1241.0	1251.0	Marlstone; light gray-brown to buff, with thin streaks of brown oil shale scattered throughout, partly silty, generally even bedded, partly laminated
Run #135	1251.0-1261.0	Cut 10.0' Rec. 10.0'
1251.0	1261.0	Oil shale; dark gray-brown to brown, partly with dark black-gray clayey streaks, marley, partly with dark brown cht nodules, generally even bedded, some bleb structure, partly laminated
Run #136	1261.0-1271.0	Cut 10.0' Rec. 10.0'
1261.0	1268.0	Oil shale; dark gray-brown, slightly marley in parts, with streaks gil at 1263.2', with s (up to 1/2" diameter) dark brown cht nodules scattered throughout, even bedded
1268.0	1271.0	Marlstone; brown to gray-brown, with brown oil shale streaks throughout, partly laminated, silty in parts, even bedded, some bleb structure



From	To	
Run #137	1271.0-1281.0	Cut 10.0' Rec. 10.0'
1271.0	1281.0	Oil shale; brown to dark gray, with dark brown cht nodules scattered throughout, partly laminated, even bedded, very marley from 1276.5 to 1281.0'
Run #138	1281.0-1291.0	Cut 10.0' Rec. 10.0'
1281.0	1291.0	Oil shale; brown to dark gray to dark gray-brown, partly marley with few dark brown cht nodules, partly laminated, even bedded, core broken and fractured throughout from 1285-1290' - rubble in parts
Run #139	1291.0-1301.0	Cut 10.0' Rec. 10.0'
1291.0	1301.0	Oil shale; dark gray-brown to gray-brown, with few marley streaks, num parting along banding, few scattered dark brown cht nodules, even bedded, few pl fos
Run #140	1301.0-1311.0	Cut 10.0 Rec. 10.0'
1301.0	1311.0	Oil shale; gray-brown to black-gray, marley, even bedded, fractures at 1309' with sks, trace pl fost, even banded, some parting along banding
Run #141	1311.0-1321.0	Cut 10.0' Rec. 10.0'
1311.0	1321.0	Oil shale; dark gray-brown to brown, with marley streaks, partly banded, partly with num partings along banding, even bedded, becoming very marley from 1319-1321', fractured at 1314.8' with sks
Run #142	1321.0-1331.0'	Cut 10.0' Rec. 10.0'
1321.0	1327.7	Oil shale; gray-brown to brown, marley with few dark brown cht nodules scatterd throughout, even bedded, partly laminated
1327.7	1331.0	Oil shale; dark gray to dark gray-brown, few scatterd cht nodules, even bedded, partly laminated, with conch fractures
Run #143	1331.0-1341.0	Cut 10.0' Rec. 10.0'
1331.0	1341.0	Oil shale; dark gray-brown to brown, with light brown marley streaks throughout, banded, few scattered dark brown cht nodules, even bedded, core broken throughout, some conch fractures, nun partings along banding
Run #144	1341.0-1351.0	Cut 10.0' Rec. 10.0'
1341.0	1351.0	Oil shale; as above, core very badly broken, rubble in parts
Run #145	1351.0-1361.0	Cut 10.0' Rec. 10.0'
1351.0	1353.0	Oil shale; dark gray-brown, partly broken, even bedded
1353.0	1361.0	Marlstone; light gray to light brown, with streaks of oil shale scattered throughout, even to wavy banding, partly laminated
Run #146	1361.0-1371.0	Cut 10.0' Rec. 10.0'
1361.0	1368.0	Oil shale; brown to light gray-brown, very marley, even bedded
1368.0	1371.0	Oil shale; dark gray to dark gray-brown, few light brown bands, slightly marley, even bedded, with fractures near base with sks
Run #147	1371.0-1381.0	Cut 10.0' Rec. 10.0'
1371.0	1373.0	Oil shale; dark gray-brown to gray, very marley, even bedded * Pos Top Garden Gulch at 1373'
1373.0	1381.0	Shale; gray to light gray, marley, even bedded, with fish fragments scattered throughout, partly w/poker chip partings

From	To	
Run #148	1381.0-1391.0	Cut 10.0' Rec. 10.0'
1381.0	1386.0	Marlstone; gray-brown to gray to brown, interbedded with streaks of brown oil shale and gray-brown shaley streaks, even bedded, num partings along banding, laminated
1386.0	1391.0	Oil shale; gray-brown to brown, interbedded with marlstone streaks, even bedded, laminated
Run #149	1391.0-1401.0	Cut 10.0' Rec. 10.0'
1391.0	1401.0	Marlstone; gray-brown with few streaks of brown oil shale, with num streaks of gray shale, part with poker chip partings, even bedded, laminated
Run #150	1401.0-1411.0	Cut 10.0' Rec. 10.0'
1401.0	1411.0	Oil shale; gray-brown, with abundant marlstone streaks, shaley in parts, core very broken from 1406-1407', even bedded
Run #151	1411.0-1421.0	Cut 10.0' Rec. 10.0'
1411.0	1421.0	Shaley; gray, marley, slightly calcareous, even bedded, abundant partings, partly with poker chip partings
Run #152	1421.0-1431.0	Cut 10.0' Rec. 10.0'
1421.0	1431.0	Shaley; gray to black-gray, with streaks of brown marlstone and oil shale scattered throughout, even bedded, broken throughout poker chip partings
Run #153	1431.0-1441.0	Cut 10.0' Rec. 10.0'
1431.0	1441.0	Shaley; as above
Run #154	1441.0-1451.0	Cut 10.0' Rec. 10.0'
1441.0	1451.0	Shaley; gray to black-gray, interbedded with thin streaks of brown marlstone, occasional thin streaks of oil shale, even bedded, broken throughout-poker chip partings
Run #155	1451.0-1461.0	Cut 10.0' Rec. 10.0'
1451.0	1461.0	Shaley; as above, fractured at 1459.5' with sks
Run #156	1461.0-1471.0	Cut 10.0' Rec. 10.0'
1461.0	1468.0	Marlstone; gray-brown to gray, interbedded with gray shale with few streaks dary gray-brown oil shale, even bedded, some wavy banding, broken throughout-poker chip partings
1468.0	1471.0	Oil shale; dark gray-brown, marley, even bedded
Run #157	1471.0-1479.0	Cut 8.0' Rec. 8.0'
1471.0	1479.0	Marlstone; dark gray to gray, very shaley in parts, with streaks of oil shale scattered throughout, even bedded, broken throughout with poker chip partings, rubble from 1476-1479'
Run #158	1479.0-1489.0	Cut 10.0' Rec. 10.0'
1479.0	1489.0	Oil shale; dark gray-brown to brown, marley in parts, even bedded
Run #159	1489.0-1499.0	Cut 10.0' Rec. 10.0'
1489.0	1494.0	Oil shale; dark gray-brown to brown, interbedded with streaks of brown marlstone, even bedded
1494.0	1499.0	Oil shale; dark gray to dark gray-brown, even bedded, slightly marley in parts, laminated, broken in parts

From	To	
Run #160	1499.0-1509.0	Cut 10.0' Rec. 10.0'
1499.0	1509.0	Oil shale; dark gray-brown to brown, with brown marley streaks, even bedded, laminated parts, partly broken
Run #161	1509.0-1519.0	Cut 10.0' Rec. 10.0'
1509.0	1519.0	Oil shale; dark gray-brown to dark brown, marley in parts, even bedded, laminated
Run #162	1519.0-1529.0	Cut 10.0' Rec. 10.0'
1519.0	1529.0	Oil shale; as above
Run #163	1529.0-1539.0	Cut 10.0' Rec. 10.0'
1529.0	1539.0	Oil shale; dark gray to gray-brown, marley, broken throughout with poker chip partings, shaley in parts, even bedded, laminated, with streaks of siltstone at 1553.5'
Run #164	1539.0-1549.0	Cut 10.0' Rec. 10.0'
1539.0	1549.0	Oil shale; dark gray to dark gray-brown, with marley streaks scattered throughout, even bedded, partly laminated
Run #165	1549.0-1559.0	Cut 10.0' Rec. 3.0' Lost 7.0'
* Cored dropped o-ut of	core barrel during recovery	
1549.0	1552.0	Oil shale; dark gray-brown, even bedded, broken, rubble in parts
1552.0	1559.0	Lost
Run #166	1559.0-1560.0	Cut 1.0' Rec. 1.0'
1559.0	1560.0	Oil shale; dark gray to dark gray-brown, partly broken, even bedded
Run #167	1560.0-1569.0	Cut 9.0' Rec. 9.0'
1560.0	1569.0	Oil shale; black to dark gray-brown, partly with bleb structure, few cht nodules, partly with asphalt streaks, partly marley, broken throughout, from 1568-1569', even bedded
Run #168	1569.0-1579.0	Cut 10.0' Rec. 10.0'
1569.0	1579.0	Oil shale; black to dark gray-brown to brown, slightly marley, in parts, even bedded, with few platy fos with a coating of pyrite, with fractures filled with wh calcareous at 1572'
Run #169	1579.0-1588.0	Cut 9.0' Rec. 9.0'
1579.0	1588.0	Oil shale; black to dark gray-brown to brown, marley in parts, even bedded, partly laminated, few scattered asphalt streaks, num partings along banding
Run #170	1588.0-1592.0	Cut 4.0' Rec. 4.0'
1588.0	1592.0	Oil shale; dark gray-brown to black, partly laminated, even bedded
Run #171	1592.0-1601.0	Cut 9.0' Rec. 9.0'
1592.0	1601.0	Oil shale; black to dark gray-brown, with few blebs of pyrite, even bedded, with marley streaks from 1597-1601', trace gil
Run #172	1601.0-1610.0	Cut 9.0' Rec. 9.0'
1601.0	1610.0	Oil shale; dark gray to dark gray-brown, with few marley brown streaks, even bedded, trace gil, streaks of clay at 1606.9', broken from 1608-1610'

From	To	
Run #173	1610.0-1620.0	Cut 10.0' Rec. 10.0'
1610.0	1620.0	Oil shale; dark gray to black to dark gray-brown, slightly marley in parts, even bedded
Run #174	1620.0 - 1630.0	Cut 10.0' Rec. 10.0'
1620.0	1630.0	Oil shale; dark gray-brown to black-gray, with brown marley streaks scattered throughout, partly shaley, laminated, even bedded, abundant partings along banding - poker chip partings
Run #175	1630.0-1640.0	Cut 10.0' Rec. 10.0'
1630.0	1640.0	Oil shale; dark gray-brown to brown, with brown marley streaks throughout, even bedded, laminated to banded, shaley in parts, num partings along banding
Run #176	1640.0-1650.0	Cut 10.0' Rec. 10.0'
1640.0	1650.0	Oil shale; black to dark gray-brown, becoming marley to very marley from 1646-1650', even bedded, fractured at 1641.1 and at 1641.7 with sks
Run #177	1650.0-1660.0	Cut 10.0' Rec. 10.0'
1650.0	1660.0	Oil Shale; gray-brown to black-gray to brown, marley, with horizontal fractures filled with wh calcite at 1653-1653.5', with silty marlstone streaks at 1666.4', even bedded, some wavy banding, with few asphalt streaks
Run #178	1660.0-1670.0	Cut 10.0' Rec. 10.0'
1660.0	1670.0	Oil shale; dark gray-brown, marley interbedded with thin streaks of black-gray shale, even bedded, broken throughout with poker chip partings, laminated
Run #179	1670.0-1680.0	Cut 10.0' Rec. 10.0'
1670.0	1680.0	Oil shale; as above
Run #180	1680.0-1690.0	Cut 10.0' Rec. 10.0'
- 1680.0	1690.0	Marlstone; black-gray to gray-brown, interbedded with black-gray thin shaley streaks, with thin streaks of oil shale scattered throughout, even bedded, partly laminated, broken throughout with poker chip partings
Run #181	1690.0-1700.0	Cut 10.0' Rec. 10.0'
1690.0	1700.0	Oil shale; dark brown to dark gray-brown, slightly marley in parts, partly laminated, even bedded, some bleb structures
Run #182	1700.0-1710.0	Cut 10.0' Rec. 10.0'
1700.0	1710.0	Oil shale; dark gray-brown to dark black-gray in parts, partly shaley, to slightly marley, num partings along banding from 1700-1705', even bedded, partly laminated
Run #183	1710.0-1720.0	Cut 10.0' Rec. 10.0'
1710.0	1720.0	Oil shale; dark gray-brown to brown, interbedded with black-gray shaley streaks and brown marley streaks, broken throughout with poker chip partings, even bedded, laminated

From	To	
Run #184 1720.0-1730.0	1720.0-1730.0	Cut 10.0' Rec. 10.0'
1720.0	1730.0	Oil shale; dark gray-brown to dark brown, some bleb structure, even bedded, with few marley streaks, fractures at 1727', with sks, broken throughout throughout with poker chip partings
Run #185 1730.0-1740.0	1730.0-1740.0	Cut 10.0' Rec. 10.0'
1730.0	1732.0	Oil shale; dark gray-brown, with (.2') streak of asphalt sandstone at 1730.5', even bedded, broken in parts
1732.0	1740.0	Oil shale; gray-brown to dark gray-brown, marley and broken along partings from 1732-1735', even bedded, partly laminated
Run #186 1740.0-1750.0	1740.0-1750.0	Cut 10.0' Rec. 10.0'
1740.0	1750.0	Oil shale; black to dark gray-brown, even bedded, some bleb structure, num partings along banding, very broken from 1741-1744'
Run #187 1750.0-1760.0	1750.0-1760.0	Cut 10.0' Rec. 10.0'
1750.0	1760.0	Oil Shale; dark gray-brown to black, even bedded, broken in parts
Run #188 1760.0-1770.0	1760.0-1770.0	Cut 10.0' Rec. 10.0'
1760.0	1770.0	Oil shale; dark gray-brown, with few black streaks, even bedded, some bleb structure, num partings along banding.
Run #189 1770.0-1780.0	1770.0-1780.0	Cut 10.0' Rec. 10.0'
1770.0	1780.0	Oil shale; dark gray-brown to dark brown, even bedded, num partings along banding, partly broken, with trace gil
Run #190 1780.0-1790.0	1780.0-1790.0	Cut 10.0' Rec. 10.0'
1780.0	1790.0	Oil shale; dark gray-brown to brown, with streaks of gray to brown marlstone scattered throughout, even bedded, partly laminated, num partings along banding, parts with poker chip partings
Run #191 1790.0-1800.0	1790.0-1800.0	Cut 10.0' Rec. 10.0'
1790.0	1800.0	Oil shale; dark gray-brown with few black streaks, interbedded with few scattered brown marley streaks, even becced, trace gil near base, num partings along banding, fractured and broken from 1791-1793'
		Drillers T.D. = 1800.0'